COMMONWEALTH OF MASSACHUSETTS

DEPARTMENT OF TELECOMMUNICATIONS AND ENERGY

Notice of Inquiry Service Quality Standards in PBR Filings	)	D.T.E. 99-84

JOINT COMMENTS OF UTILITY COMPANIES ON DEPARTMENT'S PROPOSED SERVICE QUALITY GUIDELINES ESTABLISHED IN D.T.E. 99-84

I. INTRODUCTION

These joint comments are submitted on behalf of ten investor-owned local gas distribution companies[1] (the "LDCs") and five investor-owned electric distribution companies[2] (the "Electric Companies") (collectively, the "Utility Companies") in response to an order issued by the Department of Telecommunications and Energy (the "Department") on August 17, 2000 in Notice of Inquiry on Service Quality Standards, D.T.E. 99-84 (the "August 17 Order"). In its August 17 Order, the Department solicited comments on proposed service-quality standards to be included in performance-based ratemaking ("PBR") plans established for electric and gas distribution companies pursuant to G.L. c. 164 §1E. The Department commenced this Notice of Inquiry on

1 Bay State Gas Company, The Berkshire Gas Company, Blackstone Gas Company, Boston Gas Company, Colonial Gas Company, Commonwealth Gas Company, Essex Gas Company, Fall River Gas Company, Fitchburg Gas and Electric Light Company and North Attleboro Gas Company (collectively, the "LDCs").

2 Boston Edison Company, Cambridge Electric Light Company, Commonwealth Electric Company, Fitchburg Gas and Electric Light Company and Western Massachusetts Electric Company (collectively, the "Electric Companies").

October 29, 1999 and accepted two rounds of comments in December 1999 from several interested participants, including the Utility Companies.[3]

As noted by the Department in opening its investigation, G.L. c. 164, § 1E ("Section 1E") authorizes the Department to promulgate rules and regulations to establish PBR plans for each utility company. August 17 Order at 4. In establishing PBR plans, the Department has found that, because price-cap regulation introduces a financial incentive for the regulated firm to reduce costs, a well-designed price-cap plan should include some form of protection against a reduction in service quality for customers. Boston Gas Company, D.P.U. 96-50, at 304 (Phase I) (1996); NYNEX Price Cap, D.P.U. 94-50, at 235 (1995). Consistent with Department precedent, Section 1E directs the Department to establish service-quality standards as a means of ensuring that there is no deterioration in service quality as a result of the implementation of PBR. Section 1E furthers this policy by also authorizing the Department to levy penalties against a utility company that fails to meet the Department's service-quality standards while operating under a PBR plan. Accordingly, the Department's objective for this proceeding is to develop generic policies, methods and procedures for utility companies implementing a PBR plan to ensure that service quality is not negatively affected by such implementation. August 17 Order at 1-2.

---

[3] The following entities submitted comments in addition to the Utility Companies: the Attorney General of the Commonwealth; National Consumer Law Center, Inc.; the Division of Energy Resources jointly with the Associated Industries of Massachusetts; The Energy Consortium; Massachusetts Electric Company, Nantucket Electric Company and Eastern Edison Company; NSTAR; Western Massachusetts Electric Company; Peregrine Energy Group, Inc. on behalf of the Retail Market Participants; Massachusetts CAP Directors Action, Inc., jointly with South Middlesex Opportunity Council; American Superconductor Corporation; and Utility Workers Union of America, Plumbing, Heating, Cooling Contractors of Greater Boston, Inc., and the Massachusetts Alliance of Utility Unions.

In general, the Utility Companies support the Department's overall approach to service-quality measurement as reflected in the proposed guidelines. Those service-quality guidelines involve three primary components: (1) identification of the performance indicators to be measured ("performance measures"); (2) establishment of benchmarks against which future performance will be measured; and (3) development of a penalty mechanism to guard against a degradation of service quality from a company's historical level. August 17 Order at 1. The key objective of the Department's proposed guidelines is to ensure that a company's service quality does not deteriorate in the context of a PBR plan, and therefore, the Department has determined appropriately that the use of company-specific historical data is necessary to establish reasonable and appropriate benchmarks for the comparison of future performance with prior-period performance.

However, most, if not all, utilities are currently measuring service quality to some extent and the measurement criteria that are being used by those companies may differ from the Department's generally applicable standards. If the guidelines establish generic performance measures that are inconsistent with the way in which a company has historically measured and compiled data, the historical data maintained by the company would no longer be useful in calculating a company-specific performance benchmark. In such an event, the ability to identify a deterioration in service quality following the implementation of a PBR plan is eliminated. As discussed herein, the Department's guidelines must avoid definitions that conflict or are inconsistent with company-specific approaches historically used to measure service quality.[4]

[4] In general, the Utility Companies believe that the service-quality guidelines ultimately adopted by the Department for use in PBR plans, should afford companies some flexibility to fashion a service-quality measurement program that is consistent with its historical measurement practices.

A second important issue relates to the Department's proposal to establish a penalty mechanism that would be triggered if actual performance were to vary by more than one standard deviation from the average historical performance for a particular service-quality measure. August 17 Order at 47-48. In making this proposal, the Department has appropriately recognized the need to establish a "deadband" around a company's historical average performance, so that penalties are assessed only in the event that the measurement data falls outside that deadband. Id. As discussed below, however, the Department's proposal to establish the deadband using a standard-deviation approach assumes that the historical benchmark, which represents the mean of the observed data points, accurately reflects the true mean of the underlying population. Where a sample size is less than 30, there is less statistical confidence that the sample data gives a true representation of the population parameters, and therefore, the population mean is considered to be unknown. As a result, the actual variability of the data may not be captured by the standard-deviation calculation, which undermines the validity of the standard-deviation approach in assessing revenue penalties. Significantly, for most of the Department's measures, the companies have less than ten years of historical data. Consequently, the use of the standard-deviation approach substantially increases the possibility that a company would be unreasonably and inappropriately penalized for normal variations in the data rather than for an actual deterioration in the service quality of the company.

As discussed in section IV, below, the Utility Companies are proposing an alternative methodology for establishing the performance deadbands, which is consistent with the Department's stated objectives for protecting against deterioration in service

quality, is statistically valid and offers a level of regulatory simplicity for the Department and the Utility Companies. Moreover, the Department and the Federal Communications Commission ("FCC") have previously approved a similar methodology for service-quality measurements in the telecommunications industry.

Accordingly, the comments of the Utility Companies center on three main issues: (1) proposed refinements to the definitions of the performance measures so that the measures can be generally applied to all utility companies; (2) comments on the Department's proposed method for the establishment of performance benchmarks; and (3) proposed modifications to the Department's service-quality penalty structure, which would establish performance deadbands using a methodology that more accurately defines the acceptable level of performance prior to which a penalty would be assessed. In addition, the Utility Companies respond herein to a number of related issues raised by the Department for comment, including the weighting of service-quality penalties and other requirements proposed by the Department.

Attached as Appendix A is a redlined version of the Department's draft service-quality guidelines to indicate changes that the Utility Companies propose in conjunction with the comments made herein. Attached as Appendix B is an analysis prepared by the Pacific Economics Group ("Pacific") discussing in detail the performance-deadband approach proposed by the Utility Companies.

II. THE DEPARTMENT SHOULD ESTABLISH PERFORMANCE MEASUREMENT CRITERIA THAT ARE CONSISTENT WITH THE STANDARDS AND CRITERIA CURRENTLY USED BY THE UTILITY COMPANIES.

The August 17 Order proposes to establish the following performance measures, which would be subject to revenue penalties, in the event that a measurable degradation in service quality occurs:

(1) percentage of telephone calls handled within a specified time;
(2) percentage of service appointments met on the same day scheduled;
(3) percentage of on-cycle meter readings;
(4) lost work-time accident rate;
(5) service average interruption duration (electric companies only);
(6) 95% of odor calls responded to in one hour or less (gas companies only);
(7) number of consumer complaints per year (as recorded by the Department's Consumer Division); and
(8) total dollar amount of adjustments to customer bills.

August 17 Order at 10, 13, 19, 20 and 24. Although each of the Utility Companies currently measure service-quality in accordance with one or more of the Department's performance measures, the precise measurement criteria applied by each company varies in some cases from the criteria proposed by the Department. Thus, the Department's guidelines, which are designed to establish some uniformity in how the measures are defined, would have the effect of requiring companies to change the way in which data are measured and collected. Unless such inconsistencies are eliminated, the Department's efforts to measure possible degradation in service performance by companies operating pursuant to PBR plans will be compromised.

Specifically, the Department must be able to compare post-implementation service quality with pre-implementation service quality in order to ensure that service quality is not diminishing as a result of the implementation of a PBR plan. This requires the Department to rely upon company-specific historical data in setting performance

benchmarks. However, under the proposed guidelines, the Department has established a number of performance measures that are defined differently from the measurement criteria currently employed by the Utility Companies. Thus, the undesirable effect of changing measurement criteria for performance measures that are currently being used to monitor a company's service quality is threefold: (1) any historical data compiled by the company would be rendered inapplicable; (2) the company would incur significant costs to modify its performance-measurement systems to comply with the new measurement criteria; and (3) the Department would need to allow each company to collect data for a designated period of time for the purpose of establishing benchmarks against which future performance could be evaluated.[5]

In the discussion below, the Utility Companies address each proposed performance measure that would be subject to a revenue penalty and offer suggestions for revising the definitions of the proposed performance measures to make the measures generally applicable to all companies.

A. Percentage of Telephone Calls Handled Within a Specified Time Period

The Department proposes to adopt a telephone-service factor ("TSF") performance measure that would require companies to measure the percentage of telephone calls handled within a specified time period. Specifically, the Department proposes to measure the percentage of telephone calls that are answered by a "human voice" within "20 seconds" (Proposed Standards, Section II.A). This requirement raises

---

5 If a company is not currently measuring service quality for one of the Department's performance measures, the company must be permitted to collect data for a designated time period in order to establish benchmarks for service-quality metrics that are not currently being monitored by the company.

two issues in relation to the criteria currently used by the Utility Companies to measure response time: (1) the measurement of response time may not involve a response by a "human voice;" and (2) the time frame within which the Utility Companies measure and report telephone call response time varies among companies.

With respect to measuring response time in relation to calls answered by a "human voice," most of the Companies employ automated telephone answering systems that answer calls with a recorded introductory message directing callers to choose among a number of service options. In general, the Utility Companies measure response time beginning at the point that the customer selects a service option and ending at the point that the caller receives a response from the designated service area from which the caller desires service.[6] In addition, on most systems, a caller has the option to transact business with an integrated voice response ("IVR") system, rather than a company representative, i.e., a "human voice." The ability to serve customers using an IVR system rather than a company representative is an important factor in providing expeditious quality service to customers in a cost-effective manner. Therefore, in order to standardize the criteria underlying the measurement of call response time, the Utility Companies propose to revise section II.A of the Proposed Standards to provide that response time will be measured beginning at the point that the caller makes a selection (including no selection) and ending at the point that the call is responded to by the service area selected by the

---

6 In general, where a caller does not select a service option and instead remains on the line for general assistance, the system will begin measuring response time at a designated point just after the recorded message is concluded.

caller, regardless of whether the customer chooses to be serviced by a company representative or an IVR system (see, Appendix A, Section II.A).[7]

With respect to a standardized response time of 20 seconds, it is important to note that performance-measurement systems must be programmed to measure response time at specified intervals, and therefore, the historic data compiled by each company will reflect that designation. The following tables summarizes the response times historically measured and/or reported by each company:[8]

Company	**Interval**
Bay State Gas	30 seconds
Berkshire Gas	45 seconds
Boston/Colonial Essex	40 seconds
Fall River Gas	Not measured
NSTAR Companies	30 seconds
North Attleboro	Not Measured
Fitchburg Gas and Electric Light Co.	30 seconds
WMECo	30 seconds

As a result, requiring the Companies to report the percentage of calls handled in 20 seconds would eliminate the usefulness of the historical data compiled by each company. In addition, each company would incur programming costs to recalibrate their

7 Therefore, if the caller is seeking assistance on a billing question from a customer-service representative, the response time will be measured beginning at the caller's selection of that service option and ending with the response of the customer-service representative.

8 The Department has directed companies to track and record separately call-answering response times to emergency and non-emergency calls. Proposed Standards, Section II.A. However, the two categories may be treated as one for the purpose of the penalty assessment in that the penalty would apply to the weighted average of the emergency and non-emergency response time categories. See, e.g., Boston Gas Company, D.P.U. 96-50-C at 63.

performance-measurement systems and would need to be allowed to collect data for some period of time following the implementation of system changes for the purpose of establishing appropriate performance benchmarks. Such change is not necessary or warranted because the purpose of the proposed service-quality guideline is to ensure that there is no deterioration in the response time to customer inquiries as a result of implementing a PBR plan.

The precise interval at which the response time is measured is irrelevant because any service degradation must be identified by measuring future performance against a benchmark that is based on past performance. Thus, the intervals historically measured and reported by a company are the appropriate intervals for measuring service quality following the implementation of a PBR plan. Accordingly, the Companies propose to revise Section II.A of the Proposed Standards, to allow companies to measure the percentage of calls handled "within a time interval consistent with a company's existing telephone response-time measurement system." This amendment would enable the Department to set a benchmark for this measure using a company's historic data, and as a result, would provide a meaningful comparison of past and future call-handling performance.

Moreover, in keeping with the Department's precedent, the Companies propose to amend Section II.A of the Proposed Standards, to provide a utility with the opportunity to request a waiver from the imposition of revenue penalties where it is demonstrated that the utility's call-response time has been negatively affected by exogenous events, i.e., events beyond the control of the company such as severe weather conditions or non-recurring setbacks resulting from the implementation of new information-systems

technology. The Department has previously waived revenue penalties in the face of such circumstances. Boston Gas Company, D.P.U. 97-92, at 8 (1997).

B. Percentage of Service Appointments Met on the Same Day Scheduled

The Department proposes to adopt a performance measure that would require companies to measure the percentage of service appointments met on the day scheduled with the customer (Proposed Standards, Section II.B). As set forth in Appendix A to these comments, the Companies propose minor revisions to section II.B to clarify that this measure would relate only to those service appointments for which the utility and the customer have mutually scheduled an appointment for a certain date. This will ensure that other visits to a customer's home or place of business that are scheduled by the utility, but do not involve a commitment by the customer, are excluded from the measure. Excluded appointments would relate to: (1) "external" activities, such as service upgrades, meter changeouts, meter reads and other appointments that are routinely set by the utility and do not require the customer to be on the premises; and (2) supplemental services that are provided by the company on a discretionary basis. Because the services that are provided to customers differ between gas and electric companies and among individual companies in each industry, it is important that the specific types of appointments to be included in the measure be established on a company-specific basis.

In addition, similar to the telephone-service factor, the Companies propose to amend Section II.B of the Proposed Standards to provide a utility with the opportunity to request a waiver from the imposition of revenue penalties where it is demonstrated that the utility's service-appointment performance record has been negatively affected by exogenous events, i.e., events beyond the control of the company such as severe weather conditions.

C. Percentage of On-Cycle Meter Readings

The Department proposes to adopt a performance measure that would require companies to measure the percentage of on-cycle meter readings accomplished by the company (Proposed Standards, Section II.C). The Utility Companies propose only a minor revision to Section II.C to clarify that the measure is intended to monitor the percentage of meter readings accomplished "on-cycle" rather than "on a monthly basis." This proposed revision is reflected in Appendix A to these joint comments.

D. Lost Work-Time Accident Rate

The Department proposes to adopt a performance measure that would require companies to monitor the lost work-time accident rate (Proposed Standards, Section VI.C). The Utility Companies have no proposed changes to the definition of this measure.

E. System Average Interruption Duration Index (Electric Companies)

The Department proposes to adopt a performance measure for electric companies that would measure the duration of service interruptions through the establishment of a System Average Interruption Duration Index ("SAIDI") (Proposed Standards, Section I.B and V). In the August 17 Order, the Department acknowledged the difficulty of establishing a statewide uniform measure against which the performance of individual companies would be measured, and therefore, affirmed the importance of using company-specific historical data to establish benchmarks. August 17 Order at 24-25. Significantly, although the electric companies uniformly define SAIDI to be the calculation of the average duration of service outages, the electric companies do not currently use a uniform definition for "sustained outages or interruptions," "momentary

outages," "planned outages," or "excludable major events," as set forth in Proposed Standards, Section V. To the extent that the Department's standardization of the SAIDI measure is based upon "normalizing" assumptions that are not reflected in current data of the electric companies, any inconsistencies between the Department's standard definition and a company's measurement criteria would render a company's historic SAIDI-related data irrelevant.

For example, some companies currently include all outages of one minute or more in duration when calculating SAIDI; others only measure outages of five minutes or greater.[9] However, the Department proposes to define SAIDI to reflect the total minutes of "sustained" customer interruptions divided by the total number of customers and to define "sustained outages" as outages of at least five minutes that are not classified as a momentary outages. Therefore, company-specific historic data that include interruptions of less than five minutes would not be valid in establishing a benchmark for performance under the Department's proposed standard. In addition, WMECo and the NSTAR Companies explicitly exclude outages caused by customer equipment or operation from its SAIDI statistics, whereas the Department's guidelines do not specifically exclude customer-related outages. Accordingly, the Utility Companies propose revisions to the Proposed Standards, Sections I.B and V to ensure that the Department's standards can be applied to all electric companies.

---

9 Specifically, the NSTAR Companies and Unitil currently include outages of one minute or more in the SAIDI calculation, while WMECo includes only outages of five minutes or more.

F. 95 Percent of Odor Calls Responded to in One Hour or Less (Gas Companies)

The Department proposes to adopt a performance measure that would require gas companies to respond to 95 percent of emergency odor calls within one hour or less (Proposed Standards, Section VI.B). As indicated by the Department, company-specific benchmarks would not be established for this measure and all gas companies would be required to meet this measure or be subject to a revenue penalty. August 17 Order at 20. The Companies discuss their proposal for the establishment of an appropriate penalty calculation in section IV, below.

G. Number of Consumer Division Cases Per Year

The Department proposes to adopt the number of consumer complaints per year recorded by the Department's Consumer Division as a performance measure subject to revenue penalties. August 17 Order at 13. As the Utility Companies have indicated in previous comments to the Department, their chief concern relating to this measure is the lack of objective criteria for designating a customer inquiry to the Department as a "case" to be properly included in the measure. In addition, for reasons discussed below, the Utility Companies also propose to establish the benchmark for this measure as the number of Consumer Division Cases per year per 1,000 residential customers. The lack of objective criteria is a concern because, in many instances, the companies have no control over the issues that are the focus of a customer's call to the Department. For example, customer complaints stemming from service provided by a competitive supplier or from issues relating to sanitary-code violations are not within the control of the utility.

To address this concern, the Department proposes that a customer complaint would constitute a "case" only in the following circumstances: (1) the customer has

contacted the company and remains dissatisfied; (2) the Department's investigator cannot resolve the matter without contacting the company to obtain more information; and (3) the Department has jurisdiction in the matter. August 17 Order at 13, fn7. In practice, however, these criteria are likely to be broadly applicable, and therefore, will not be sufficient to separate customer complaints from bona-fide cases requiring investigation by the Department. For example, almost any inquiry made by Consumer Division staff to the company would be sufficient to qualify an issue as a customer-complaint case because such inquiries only rarely involve issues that would fall outside the Department's "jurisdiction." Thus, using the Department's criteria, even minimal interaction could qualify the issue as a case, whether or not there is a bona-fide, unresolved customer-service issue between the utility and the customer.

In addition, the Department's criteria do not require substantiation of the customer's claim that the company has been contacted. Without substantiation, a customer complaint will be categorized as a "case" where a customer calls the Department without first calling the company and Consumer Division staff, in turn, contacts the company for additional information. In these circumstances, a customer complaint is categorized as a bona-fide customer-complaint case without any opportunity for the company to address the customer's issue. The Utility Companies propose that a process be established to substantiate that the customer has indeed contacted the company prior to contacting the Consumer Division regarding the alleged customer complaint.[10]

[10] Such substantiation would include, but not be limited to, requiring a customer to provide the name of the company representative that they spoke with, along with the day and date of the call. Any substantiation provided by the customer should be logged by Consumer Division staff.

Moreover, the underlying basis for the consumer-complaint measure is presumably to determine whether the utility is resolving customer-service issues on a consistent basis from year to year. Therefore, customer complaints should generally be categorized as cases only where the complaint relates to the utility's performance or other factors under the utility's control. Accordingly, the Utility Companies propose that customer-complaint cases be handled in the following manner:

- Complaint calls should be categorized as Consumer-Division Cases only where there is substantiation that the customer has attempted first to contact the utility;
- Each month, a detailed report, including tabulation of customer complaints that have been categorized as customer-complaint cases, should be provided by Consumer Division staff to each company;[11]
- Monthly statistics should exclude complaints from individuals who are not customers of the company or are made anonymously;
- Monthly statistics should exclude issues that are beyond the company's control such as sanitary-code violations, complaints relating to service provided by a competitive supplier and complaints relating to a new rate filing or other issues not related to the company's provision of service to customers.

In addition, the Department should establish a process that would allow companies to appeal the designation of a customer complaint as a Consumer Division Case to the Commission if questions arise regarding the Consumer Division's designation. The Utility Companies are willing to meet periodically with Consumer Division staff to discuss the application of this criteria in order to gain a better understanding of the circumstances under which individual customer complaints will be categorized as "cases," which would work to minimize debates over the composure of the Consumer Division statistics.

---

[11] This step is necessary to afford the utility an opportunity to review case designations with Consumer Division staff and to correct any erroneous assignments that may have inadvertently been included before the passage of time makes such efforts impossible.

Moreover, the Utility Companies propose to establish the benchmark for this measure based on the number of Consumer Division cases per 1,000 residential customers. The Utility Companies propose to apply the same ratio to Billing Adjustments for the sake of consistency, as discussed below, and for the purpose of ensuring that the number of cases is viewed on a relative basis to the overall size of the customer base.

Lastly, the Utility Companies propose to amend Section II.A of the Proposed Standards, to provide a utility with the opportunity to request a waiver from the imposition of revenue penalties where it is demonstrated that the number of Consumer Division cases have increased as a result of exogenous events, i.e., events beyond the control of the company such as severe weather conditions or non-recurring setbacks resulting from the implementation of new information-systems technology. The Department has previously waived revenue penalties in the face of such circumstances. Boston Gas Company, D.P.U. 97-92, at 8 (1997). Accordingly, the changes proposed by the Utility Companies are included in Appendix A, Section III.A.

H. Billing Adjustments in Dollars

The Department proposes to establish a second performance measure based upon data compiled by the Consumer Division, which would measure and compare total dollar amounts of billing adjustments on a year-to-year basis (Proposed Standards, Section III.A). Of significant concern to the Utility Companies is the fact that this measure provides a negative incentive to the utility in relation to the aggressive pursuit of billing issues with commercial and industrial ("C&I") customers. Billing adjustments for C&I customers have the potential to be much larger in total dollars than adjustments for

residential customers, and therefore, this measure encourages a utility to make billing concessions to C&I customers rather than risk a determination by the Department that a large bill adjustment is required.

In addition, the Department's regulations do not provide C&I customers with the right to seek relief by the Department with respect to billing issues; that right is afforded only to residential customers. See, 220 C.M.R. §§ 23.00–28.00. Billing adjustments for C&I customers are largely affected by the Department's decision to review a particular matter, rather than being a reflection of the company's practices with C&I customers. The disproportionate impact that C&I customer-billing adjustments can have on the annual measurement of a company's performance in this category, as well as the discretionary nature of the Department's involvement in these matters, warrants that C&I customer-billing adjustments be excluded from the calculation of this service quality measure.

Another significant concern of the Utility Companies in relation to this measure is that it is likely to "double count" matters that are also classified as Consumer Division cases and are already factored into that performance measure. Moreover, the Department's proposal to measure the total dollar amount of billing adjustments will penalize companies as they add new customers to their distribution system or as the price of utility service changes. In both of these instances, the total dollar amount of bills subject to billing adjustments increases and the potential for this service-quality measure to trigger a penalty increases even if there is no change in the proportionate number of billing adjustments from historical experience. Additional customers and higher utility costs alone can cause a higher level of total dollar billing adjustments without any change

in the actual quality of service provided to customers. For these reasons, the Utility Companies propose that, in addition to removing the C&I billing adjustments from this measure, billing adjustments should be calculated based on the total dollar amount of residential billing adjustments per 1,000 residential customers.

Lastly, the Utility Companies propose to amend Section II.A of the Proposed Standards, to provide a utility with the opportunity to request a waiver from the imposition of revenue penalties where it is demonstrated that the utility's dollar amount of billing adjustments been increased as a result of exogenous events, i.e., events beyond the control of the company such as non-recurring setbacks resulting from the implementation of new information-systems technology.

III. THE DEPARTMENT HAS APPROPRIATELY DETERMINED THAT PERFORMANCE BENCHMARKS SHOULD BE BASED ON COMPANY-SPECIFIC HISTORICAL DATA

The second component of the Department's proposed service-quality guidelines is the setting of benchmarks against which performance can be measured following the implementation of a PBR plan. August 17 Order, at 5-8, 52-53. The Department has proposed to establish performance benchmarks using a minimum of two years of company-specific historic data. Id. at 52. As discussed above and in the report of the Pacific Economics Group, the use of company-specific historical data is reasonable and necessary where the underlying objective is to determine whether service-quality levels are maintained following the implementation of a PBR plan. Therefore, the Utility Companies support the Department's determination that benchmarks be based on company-specific historical data.

However, as discussed in the report of the Pacific Economics Group, general statistical principles dictate that a minimum of three historical values is necessary for the establishment of statistically sound performance benchmarks and deadbands (Pacific Report at 17). Thus, the Utility Companies propose to establish performance benchmarks and associated deadbands on a minimum of three years of annual data. In the event that less than three years of annual data is available, benchmarks and deadbands could be established, but would not be subject to revenue penalties until the benchmarks and deadbands are adjusted to reflect at least three historical values. As discussed in section IV of these comments, the test-statistic approach developed by the Pacific Economics Group is designed to adjust for the small sample sizes, i.e., sample sizes of three values or greater, that are available to each company for the establishment of performance benchmarks and the associated deadbands.

Under the Utility Companies' proposal, the performance benchmark and associated deadbands can be established using a minimum of three data points and there is no need to create a set of ten data points from the existing data. August 17 Order at 53. Accordingly, the Utility Companies support the Department's proposal to set the historical benchmarks for the duration of the PBR where the benchmarks are based on ten years of annual data and to allow for the "rolling in" of actual data where less than ten years of annual data is available.

Lastly, the Department proposes to require distribution companies to collect data that may be necessary for the use of benchmarks based on nationwide, region-wide or statewide data. Id. at 8. As an initial matter, the Utility Companies note that data cannot be collected until a determination has been made by the Department as to the specific

measure that would be incorporated into the service-quality plan, i.e., the collection of data must be tied to specific parameters. Given, however, that the key objective of the Department's inquiry is to ensure that there is no deterioration in service quality following the implementation of a PBR plan, comparisons to national or regional benchmarks would not be appropriate since such benchmarks have no relation to the historical service provided by the Utility Companies. Accordingly, there is no basis for the implementation of national, regional or statewide performance measures.

IV. THE DEPARTMENT SHOULD ESTABLISH APPROPRIATE MONETARY INCENTIVES THAT RESULT IN PENALTIES THAT ARE ASSESSED TO COMPANIES ONLY IN THE EVENT OF AN ACTUAL DEGRADATION IN SERVICE QUALITY

The Department has found that the implementation of a PBR plan introduces a strong financial incentive for a utility to reduce costs, and therefore, PBR plans should incorporate incentives (in the form of revenue penalties) to discourage utilities from undertaking cost containment efforts that diminish the quality of service provided to customers. August 17 Order at 46-48; see also Boston Gas Company, D.P.U. 96-50, at 304 (Phase I) (1996); NYNEX Price Cap, D.P.U. 94-50, at 235 (1995). The penalty structure proposed by the Department involves: (a) the development of service-quality benchmarks based on data reflecting an individual company's historical performance; (b) the establishment of a deadband around each benchmark equal to one standard deviation from a utility's historical average performance based on a minimum of two years of data (id. at 47, 52); (c) a non-linear formula upon which revenue penalties will be calculated (id. at 46-47); and (d) the relative weighting of penalties among the various performance measures (id. at 50).

As discussed below, the Utility Companies support the overall design of the Department's proposed penalty structure subject to certain modifications proposed herein that are aimed at ensuring that companies are not unreasonably and inappropriately penalized for normal variations in the data resulting from external factors not within the control of the company. As requested by the Department, the Utility Companies also propose an allocation of penalties that are weighted among the performance measures.

A. The Department Should Establish Performance Deadbands Using a Test Statistic Approach Rather Than the Standard Deviation Approach

As established by the Department, the implementation of a PBR plan creates strong incentives for the utility to undertake cost-cutting measures, which have the potential to affect the level of service provided by the utility on a going forward basis. See Bay State Gas Company, D.P.U. 97-97 (1997); Boston Gas Company, D.P.U. 96-50 (Phase I) (1996); NYNEX Price Cap, D.P.U. 94-50 (1995); Incentive Regulation, D.P.U. 94-158, at 54 Thus, the service-quality penalty structure is intended to act as an incentive to encourage the utility to maintain service quality levels following the implementation of a PBR plan. Boston Gas Company, D.P.U. 96-50 (Phase I) at 303, 304; NYNEX Price Cap, D.P.U. 94-50, at 235. To meet this objective, the penalty structure adopted by the Department must be designed to impose penalties only where there is an actual deterioration of service and not for random variations in the data that result from external factors beyond the control of the company. Moreover, the penalty structure adopted by the Department should be consistent with statistical benchmarking principles and not overly complicated to administer.

A significant consideration in the development of a service-quality penalty structure is the impact of external factors on a company's performance measurements (see Pacific Report at 5). External factors are important because the underlying premise of the penalty mechanism is that it should serve to influence management decisions on service-related issues. To the extent that unusual weather, price volatility, or other factors beyond management's control cause a company's performance measurement data to fluctuate, there is the potential for a company to be unreasonably and inappropriately penalized for random variations in the data rather than for a deterioration in service quality resulting from cost-containment initiatives implemented by company management. Moreover, random variations in the data attributable to external factors have the potential to put a utility into a penalty situation, but have no potential to put the utility into a reward situation.[12] This asymmetry denies the utility the opportunity to balance out over time the revenue effects of random variations in the data. Therefore, it is critical that the penalty structure be designed to account for and accommodate the influence of external factors.

External factors may differ across companies, may change over time and may fluctuate around norms reflected in the historical data of each company. Therefore, a comprehensive process for establishing service-quality benchmarks based on company-specific historical data would entail a detailed statistical or econometric analysis that are designed to identify the significant external factors or "quality drivers" that influence

---

12 Although the August 17 Order did not recommend the use of incentives for companies implementing a service-quality plan, the use of incentives would help mitigate against penalties incurred as a result of performance observations that were influenced by external factors. Without the opportunity to receive incentives, the Department's proposal to use of a one standard deviation deadband becomes more problematic because of the risk to Utility Companies of being penalized for service declines that are caused by external factors.

each service quality measure (Pacific Report at 6). Having identified the most influential external factors affecting service-quality measures, company-specific historical data could then be "normalized" to remove the impact of abnormal variations in external factors from the annual historical data. Based on normalized annual service-quality data, benchmarks could be established against which future normalized performance measurement data could be compared. This would identify any deterioration in service quality caused by circumstances other than uncontrollable variations in external factors.

This type of an econometric study would require the expenditure of significant effort and resources by each company, and because the process of establishing service-quality benchmarks is in its infancy, there is little research or empirical analysis currently available on the influence of external factors on service-quality measurements. In the absence of an econometric analysis establishing the function of external factors on service quality, it is necessary to develop an alternative approach to limit the potential that penalties would be imposed on a company as a result of the random impact of uncontrollable external factors. The alternative approach adopted by the Department involves the creation of a penalty "deadband" around each service-quality benchmark to ensure that random variations in service-quality data associated with external factors are reasonably excluded from the penalty structure. Thus, the inclusion of a deadband in the design of a penalty structure will reduce the likelihood that random variations in the performance measurements are mistaken for an actual deterioration in the service-quality efforts of a company, which is referred to as a "Type I error" (Pacific Report at 4).[13]

---

13 A "Type I error" occurs when a utility is penalized for a measurement that deviates from the historical benchmark and the deviation is a result of random variation in the data rather than an actual deterioration in the service-quality efforts of the utility.

The Department has found that the use of a deadband recognizes the existence of normal statistical variations in service-quality data collected by the utilities and will provide a measure of protection from revenue penalties that would result from random statistical events. August 17 Order at 47. The Department proposes to establish a deadband equal to one standard deviation from a utility's historical average performance. Id. at 47-48. For performance falling within the deadband, no penalty would be imposed. Id. at 47. As described in Appendix B to these comments, however, standard deviation is only one component of a calculation that needs to adjust for other factors, including sample size, in order to provide a level of confidence that Type I errors will be minimized in the assessment of service-quality penalties. The avoidance of Type I errors is especially critical where the penalty structure is asymmetrical, and therefore, the utility is unable to balance penalties associated with random variations on the negative side with rewards associated random variations on the positive side.

As described in the Pacific Report, the use of a Test Statistic is a more appropriate methodology for establishing deadbands where there is a relatively limited sample size (Pacific Report at 9-12). In short, standard deviation is not statistically valid where the sample size is relatively small because the standard-deviation concept assumes that the mean of the sample data is an accurate estimate of the true mean of the underlying population. The sample mean and the sample standard deviation serve as estimates of the true mean and standard deviation of a normally distributed population only where there is level of confidence that the company's historical average performance benchmark represents the true mean. Where the sample size is less than 30, there is less confidence that the sample data gives a true representation of the population parameters. Standard

deviation is not a statistically valid concept for the purpose of measuring the risk of Type I errors where the sample mean is unknown or varies from the actual mean as a result of a limited sample size, which is not representative of the characteristics of the population. As a result, the actual variability of the data may not be reflected in the standard deviation calculation, which increases the possibility that a Type I error will occur.

Significantly, the probability of a Type I error occurring under the Department's standard deviation approach increases as the sample size decreases. For example, if the standard-deviation deadband is established using the most recent ten years of annual data, the probability of error is 18.3 percent. For a sample size of five years, the probability of a Type I error rises to 20.7 percent. For a sample size of only two historical values, the probability of a Type I error occurring is 28.2 percent. Accordingly, the Pacific Economics Group recommends the use of a Test Statistic, which incorporates the standard deviation concept, while giving consideration to the size of the available sample, which is being used to estimate the mean of the population and making appropriate statistical adjustments for uncertainties associated with the sample size (and the unknown mean).

Rather than establishing a deadband based on a simple standard deviation calculation, the Pacific Economics Group proposes a more scientific approach that would involve hypothesis testing. Using this approach, it is possible to test the hypothesis that a given data point collected during the PBR period is drawn from the same population as the benchmark (Pacific Report at 13-17). The deadband that results from the application of this approach is based on a statistically valid confidence level of 95 percent, which means that there is a 95 percent probability that the deadband on average will capture the

random deviation associated with the data for a given performance measure. Stated in other words, a 95 percent confidence level limits the chance of a Type I error to 5 percent, which leads to the conclusion that the variation in the data is most likely attributable to an actual deterioration of service quality as a result of factors within management's control.

The Test Statistic represents an appropriate refinement of the standard deviation approach in that it adjusts the standard deviation to account for any uncertainty associated with the size of the sample that is serving as the basis for the calculation of the deadband. By using this Test Statistic at a 95 percent confidence interval, the potential for Type I errors will be maintained at 5 percent, thereby reducing the chance that penalties would be inappropriately assessed as a result of data variations related to external factors not within the control of the company. Accordingly, this alternative methodology creates deadbands consistent with the Department's stated objectives, is statistically valid and has been previously approved by the Department and the FCC for use in relation to service-quality standards in the telecommunications industry. Verizon MA (Order Adopting Performance Assurance Plan), D.T.E. 99-271, at 26-27 (September 5, 2000), citing In the Matter of Bell Atlantic New York for Authorization Under Section 271 of the Communications Act to Provide In-Region, InterLATA Service in the State of New York, CC Docket 99-295, Memorandum Opinion and Order, FCC 99-404, (December 22, 1999).[14]

---

14 As noted in the Pacific Report, the FCC extensively discussed the appropriateness of confidence intervals in performance assurance plans ("we use the 95% confidence interval because it is a commonly used standard, and because it gives us a reasonable chance of detecting variations in performance not due to random chance, with few false conclusions that variations are not due to random chance") (Pacific Report at 15).

B. The Department Should Revise the Formula Used to Calculate Revenue Penalties

In conjunction with its proposal to create a deadband based on the standard-deviation approach, the Department established a non-linear formula, whereby the revenue penalty is applied in a parabolic relationship to the variation from the average historical performance for a particular performance measure. August 17 Order at 46. Under this formula, the maximum penalty would be incurred at a performance level equal to two standard deviations from the historical performance for that performance measure. Id. at 46-47.[15]

As discussed in Appendix B, consistent with the use of a test statistic for establishing deadbands, the Utility Companies propose to modify the Department's proposed parabolic penalty formula for the sole purpose of substituting the proposed 95 percent confidence interval that serves as the basis for the deadband calculation for the standard-deviation approach suggested by the Department. If a company's performance falls within or is equal to the parameters of the deadband that is calculated from the test statistic assuming a 95 percent confidence level, penalties would not be imposed. See, Proposed Standards, Section VII.A. Aside from this substitution, the Utility Companies have preserved the structure of the Department's proposed penalty formula. This modification to the penalty formula is reflected in Appendix A to these comments.

C. The Department Should Allocate Penalties Among the Performance Measures

[15] The Department proposes to set the aggregate penalty level at the maximum statutory rate of two percent of transmission and distribution revenues. August 17 Order at 50. The Utility Companies have proposed a definition for "distribution revenues" in Appendix A, Section I.B.

The Department has found that certain performance standards are more critical to a utility's safe and efficient operation than others, and therefore, a relative weighting of penalties among the performance measures is warranted. August 17 Order at 50. In particular, the Department has indicated that greater weight should be given to measures governing safety and reliability. Id. The Department also recognized that determining service performance in relation to the number of Consumer Division cases and billing adjustments involves a more subjective exercise of judgment than is required in relation to other measures, which are based on more objective data. Therefore, the Department has indicated that such measures should be accorded less relative weight in relation to the penalty mechanism. Accordingly, the Utility Companies propose a three-tiered penalty structure:

(1)	Safety and Reliability	
	Odor Call Response	25% (Gas Only)
	SAIDI	25% (Electric Only)
	TSF – Emergency Calls	15%
	Lost Work-Time Accident Rate	15%
(2)	Customer Service	
	TSF Non-Emergency Calls	10%
	Service Appointments	15%
	On-Cycle Meter Reads	15%
(3)	Consumer Division Statistics	
	Consumer Division Cases	2.5%
	Billing Adjustments	2.5%

Under this approach, safety and reliability measures would be weighted most heavily with 55 percent of total possible revenue penalties allocated to that category. Forty percent of penalties would be weighted to customer-service measures with appointments and on-cycle meter reads given comparable weightings of 15 percent and

non-emergency call response times being weighted at 10 percent.[16] A total of five percent of total possible revenue penalties would be allocated to the Consumer Division measures in recognition of the more subjective nature of those statistics and because these measures are not currently adjusted to reflect factors such as growth in the number of customers or increases in a company's revenues as a result of energy price volatility or base-rate changes.

D. The Department Should Establish a Performance Deadband For Odor Calls Based on Company-Specific Historical Data

In its August 17 Order, the Department established a uniform benchmark for local gas distribution company response time to odor calls. August 17 Order at 20. Specifically, the Department will require all local distribution companies to respond to 95 percent of all Class I and Class II odor calls in one hour or less, subject to a revenue penalty for failing to meet that standard. Id. Because this imposes a statewide uniform standard that may or may not reflect the historical performance of a particular gas company, the Department indicated that it would consider proposals to calculate the penalty in a manner that differs from the calculation applied to other measures. Id.

To that end, the Utility Companies propose to establish a penalty structure for Odor Calls that would assess the maximum penalty when a company's performance measurements for a particular year of the PBR plan indicate that the company is responding to 90 percent or less of all odor calls within 60 minutes. Under the penalty-weighting structure proposed by the Utility Companies, this measure would be allocated

---

16 In combination, emergency and non-emergency call response time measurements would receive a weighting of 25 percent. In addition, although the Department has directed utilities to track and record separately the handling time for emergency and non-emergency calls, the Department has previously allowed the two categories to be combined and a penalty assessed based on the weighted average of the two categories. Boston Gas Company, D.P.U. 96-50-C at 63.

25 percent of the maximum penalty that could be assessed to the company based on distribution revenues. For each one percent that the company's performance falls below the benchmark of 95 percent,[17] the company would be assessed a penalty equal to 20 percent of the total penalties allocated to this measure except where the company serves less than 100,000 customers. Smaller companies respond to far fewer odor calls than larger companies, and therefore, a one percent change in the number of calls responded to within 60 minutes can result where the company is unable to respond to just a few calls over the course the year in 60 minutes or less. Accordingly, the Utility Companies propose to allow companies serving less than 100,000 customers to propose a percentage increment for the application of penalties that would take into account the relatively small number of odor calls.

E. The Department Should Not Require Customer-Specific Penalty Mechanisms

In its August 17 Order, the Department solicited comments on the proposal to establish individual customer-protection mechanism. August 17 Order at 51. Although certain companies have instituted customer-specific programs, the Utility Companies believe that, in general, the use of customer-specific penalty mechanisms should not be mandated by the Department in light of the comprehensive service-quality standards proposed in this proceeding. Under the proposed service-quality standards, Utility Companies operating under PBR have the potential to incur revenue penalties for degradation in service on a number of measures that relate directly to the interaction

[17] Consistent with Department precedent, the calculation of actual performance will be carried out to two decimal places and compared to the benchmark for this measure. If the difference is 0.5 percentage points or above, the company would incur a penalty. If the difference is less than 0.5 percentage points, then no penalty would be applied. See, Boston Gas Company, D.P.U. 97-92, at 7 (1997).

between a company and its customers. For example, the telephone-service factor is designed to penalize a utility for decreases in response times to customer calls on all matters (emergency or non-emergency) for which the individual customer may be contacting the company. Similarly, the service appointment measure is designed to penalize a utility for declines in meeting service appointments with individual customers.

In the event that service quality to customers deteriorates, the company will be subject to a revenue penalty, which under a PBR plan, effectively reduces rates charged to customers. Therefore, customers of these companies will realize a monetary benefit through lower rates even if individually they have not experienced unsatisfactory service from their utility company. Requiring customer-specific penalties on top of these monetary benefits would double penalize the utility, and therefore, should be rejected by the Department. Thus, the Utility Companies propose that the use of customer-specific programs continue to be discretionary for utility companies.

V. REPORTING REQUIREMENTS AND NON-PENALTY PERFORMANCE MEASURES

The August 17 Order proposed that Utility Companies report various data to the Department regarding reliability and safety measurements identified by the commenters in this proceeding. These issues are covered below:

A. Line Losses

Regarding the Department's proposal to report line loss factors, the electric companies propose that the Department accept line-loss data reported by the companies on an annual basis in their respective FERC Form 1 filings as sufficient to satisfy reporting requirements for this category. August 17 Order at 31. In general, the Utility Companies believe that differentiation is not necessary since non-technical energy losses are insignificant, as referenced in the August 17 Order. Id. at n.23. Additionally, the gas companies manage their unaccounted for gas consistent with the provisions of the Model Terms and Conditions. Accordingly, the Utility Companies do not propose any further reporting requirements with respect to line losses and unaccounted for gas.

B. SAIDI/SAIFI Distinction

Contrary to the views of some of the commenters in this proceeding, the frequency and duration of electric service outages, as measured by SAIFI and SAIDI, respectively, are interrelated electric reliability indices that provide similar data regarding a company's electric service. The Department has determined properly that SAIFI tracks SAIDI very closely and that penalties need apply only to SAIDI in order to minimize the degradation of the reliability of electricity service. August 17 Order at 25.

C. Major Outage Events

Regarding major electric outage events, such as those relating to weather, the August 17 Order requires the Utility Companies to collect and report pertinent information relating to such events, but rejected suggestions by some commenters that the Department establish a service benchmark relating to this category. August 17 Order at 37. Several of the Utility Companies already measure major outage events in the

context of their SAIDI measurements and, accordingly, the Utility Companies do not oppose continuing to measure these events. The August 17 Order properly noted that weather events are clearly beyond the control of the Utility Companies and, therefore, the determination not to establish a benchmark for this category appropriately balances the interest of the Department to gather relevant information regarding the length and impact of major outage events, particularly those relating to severe weather, without unfairly subjecting a company to penalties.

D. Customer Surveys

The August 17 Order proposes that the Utility Companies perform two surveys of customer satisfaction on an annual basis, one with an independent survey firm (Proposed Standards at 5). The Utility Companies propose revisions to Section III.B to eliminate the requirement that a company use an independent marketing firm. The costs associated with using an independent survey firm to conduct a customer survey can be significant, and therefore, are not justified, particularly in light of the use of these surveys merely as an informational performance tool. Accordingly, the Department should allow the Utility Companies to perform these surveys in a cost-effective manner.

E. Capital Expenditures

The Department proposes to require utility companies to provide the Department with a capital expenditure history of expenses of its transmission and distribution systems over $500,000 for the last three years and once a year thereafter. August 17 Order at 33. However, capital expenditures of over $500,000 are normally incurred for new equipment and facilities or unique maintenance projects. The Utility Companies incur many capital expenditures that are much smaller in scale to maintain existing facilities.

Therefore, reporting only high-cost capital expenditures to the Department fails to account for these smaller expenditures that may more directly relate to maintaining the reliability of transmission and distribution facilities and infrastructure. The Utility Companies have no objection to the requirement, but suggest that the information must be viewed as only one piece of a broader capital-investment plan that is subject to review by the Department in other proceedings.

VI. CONCLUSION

The Utility Companies request that the Department incorporate the recommendations of the Utility Companies, as referenced above, in any final order issued by the Department in this proceeding. The Utility Companies look forward to further commenting on the August 17 Order during any technical sessions and/or hearings that the Department may schedule.

TABLE OF CONTENTS